

ABSTRACT OF THE DISCLOSURE

Systems and methods of generating and manipulating an ultrasound beam are disclosed. The methods include using selective sets of ultrasound elements to generate an ultrasound beam, scanning the beam over a series of ultrasound elements in order to collect echo data covering an area, and generating an image from the resulting data. The scanning process includes shifting the set of ultrasound elements used to form the ultrasound beam by more than one ultrasound element (block-switching) between each step in the scanning process. This is accomplished without loss of image resolution by using area-forming techniques. The block-switching technique enables use of cross-correlation methods during image construction.